

REMARKS

Applicants are filing this Response to address the Official Action dated December 20, 2004. At the time of the Official Action, claims 1-55 were pending. While claims 29 and 42 have been amended, no other claim amendments are being made at this time and no claims are being cancelled or added. Accordingly, claims 1-55 remain currently pending.

With respect to prior art rejections, claims 1-10, 12-19, 21-30, 32-36, 38-43, 45-49 and 51-55 were rejected under 35 U.S.C. § 103(a) as being rendered obvious by U.S. Patent No. 5,778,070 to Mattison (herein referred to as “Mattison”) and U.S. Patent No. 6,308,265 to Miller (herein referred to as “Miller”). Claims 11, 20, 31, 37, 33 and 50 were rejected under 35 U.S.C. § 103(a) as being rendered obvious by Mattison in view of Miller and U.S. Patent No. 6,401,208 to Davis et al. (herein referred to as “Davis”). These rejections are addressed in detail below.

First Rejection Under 35 U.S.C. § 103

The Examiner rejected claims 1-10, 12-19, 21-30, 32-36, 38-43, 45-49 and 51-55 under 35 U.S.C. §103(a) as being rendered obvious by the Mattison and Miller references. Specifically, the Examiner stated:

- a. Referring to claim 1:
 - i. Mattison teaches:
 - (1) a first section of non-volatile memory configured to store a BIOS program, the first section of non-volatile memory being reprogrammable [i.e., the BIOS is stored in flash memory to allow for field updates and reprogramming of the BIOS (column 1, lines 56-57). In fact, referring to Figure 2, typically the upper 64 kilobytes in the first megabyte of the original PC architecture is allocated for BIOS (column 7, lines 21-23)]; and

(2) second section of non-volatile memory operatively coupled to the first section of non-volatile memory, the second section of non-volatile memory, the second of non-volatile memory being configured to store a boot-block program [i.e., referring to Figure 2, “a boot-block program” is considered to also store in a flash memory 108 (column 5, line 55) and any extensions to the BIOS is contained in a region below the 64 kilobytes allocated to the BIOS, along with any other “program memory”, in which a boot-block program is inherently provided (column 7, lines 23-25)];

(3) the boot-block program having a first validation routine configured to validate the BIOS program stored in the first section of non-volatile memory, and the BIOS program having a second validation routine configured to validate the boot-block program stored in the second section of non-volatile memory [i.e., referring to Figure 3, in block 308, the current program in flash memory 108 is for verifying and/or validating the source and content of the flash memory upgrade program, whereby “a first validation routine configured to validate the boot-block program” are considered to include in this part of the upgrade program (column 9 lines 38-40)].

ii. Although, Mattison does not explicitly mention the flash memory could store the boot block program, Miller teaches:

(1) Figure 3 is flow chart describing the method according to the present invention. Such a method is applicable to a symmetrical flash part, in which boot block code (say of 16 Kbyte size) is stored in a first region of the flash part, and with a beginning portion (say the first 48 Kbytes) of updatable BIOS code also stored in the first region. For ease in explanation and not by way of limitation, the first region (segment) and all other regions (segments) of the symmetrical flash part have a size of 64 bytes Kbytes. In the example, the remaining portion of the BIOS code is stored in a second region contiguous (in a memory addressable sense) with the first region (column 5, lines 32-44; see also column 3, lines 31-51).

iii. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to:

(1) clearly point out the boot block program resides within the flash memory for protecting the flash recovery code that formerly resides in a protected boot block segment of a non-symmetrical flash part (**column 3, lines 25-27 of Miller**).

iv. The ordinary skilled person would have been motivated to:

(1) clearly point out the boot block program resides within the flash memory for protecting boot block code while allowing an update to other code or data residing in the same block (**column 3, lines 29-31 of Miller**).

...

n. Referring to claims 29 and 42:

i. These claims have limitations that is similar to those of claim 1, thus they are rejected with the same rationale applied against claim 1 above.

Official Action, pp. 2-4 and p. 8 (Emphasis in original).

While Applicants have amended claims 29 and 42 to clarify the claimed subject matter, Applicants respectfully traverse this rejection. The burden of establishing a *prima facie* case of obviousness falls on the Examiner. *Ex parte Wolters and Kuypers*, 214 U.S.P.Q. 735 (B.P.A.I. 1979). Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention absent some teaching or suggestion supporting the combination. *ACS Hospital Systems, Inc. v. Montefiore Hospital*, 732 F.2d 1572, 1577, 221 U.S.P.Q. 929, 933 (Fed. Cir. 1984). Accordingly, to establish a *prima facie* case, the Examiner must not only show that the combination includes *all* of the claimed elements, but also a convincing line of reason as to why one of ordinary skill in the art would have found the claimed invention to have been obvious in light of the teachings of the references. *Ex parte Clapp*, 227 U.S.P.Q. 972 (B.P.A.I. 1985). When prior art references require a selected combination to render obvious a subsequent invention, there must be some reason for the combination

other than the hindsight gained from the invention itself, i.e., something in the prior art as a whole must suggest the desirability, and thus the obviousness, of making the combination. *Uniroyal Inc. v. Rudkin-Wiley Corp.*, 837 F.2d 1044, 5 U.S.P.Q.2d 1434 (Fed. Cir. 1988).

Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention absent some teaching or suggestion supporting the combination. *ACS Hospital Systems, Inc. v. Montefiore Hospital*, 732 F.2d 1572, 1577, 221 U.S.P.Q. 929, 933 (Fed. Cir. 1984). One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988).

Additionally, if the Examiner relies on a theory of inherency, the extrinsic evidence must make clear that the missing descriptive matter is *necessarily* present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill in the relevant art. *See In re Robertson*, 169 F.3d 743, 49 U.S.P.Q.2d 1949 (Fed. Cir. 1999). The mere fact that a certain thing *may* result from a given set of circumstances is not sufficient. *See id.* In relying upon the theory of inherency, the Examiner must provide a basis in fact and/or sound and supportable technical reasoning to support the determination that the allegedly inherent characteristic *necessarily* flows from the teachings of the applied prior art. *See Ex parte Levy*, 17 U.S.P.Q.2d 1461, 1464 (B.P.A.I. 1990). The Examiner, in presenting the inherency argument, bears the evidentiary burden and must adequately satisfy this burden. *See id.* Regarding functional limitations, the Examiner must evaluate and consider the

functional limitation, just like any other limitation of the claim, for what it fairly conveys to a person of ordinary skill in the pertinent art in the context in which it is used. *See* M.P.E.P. § 2173.05(g); *In re Swinehart*, 169 U.S.P.Q. 226, 229 (C.C.P.A. 1971); *In re Schreiber*, 44 U.S.P.Q.2d 1429, 1432 (Fed. Cir. 1997). If the Examiner believes the functional limitation to be inherent in the cited reference, then the Examiner “must provide some evidence or scientific reasoning to establish the reasonableness of the examiner’s belief that the functional limitation is an inherent characteristic of the prior art.” *Ex parte Skinner*, 2 U.S.P.Q.2d 1788, 1789 (B.P.A.I. 1986).

In the rejection, the Examiner asserted that the Mattison reference disclosed the claimed subject matter except that Mattison does not explicitly mention that the flash memory could store the boot block program. In an attempt to cure these deficiencies, the Examiner asserted that the Miller reference discloses the missing subject matter. However, despite the Examiner’s assertions, the Mattison and Miller references cannot render independent claims 1, 29 and 42 obvious because the references do not include each and every element recited in those claims. For example, claim 1 recites “the boot-block program having a first validation routine configured to validate the BIOS program stored in the first section of non-volatile memory, and the BIOS program having a second validation routine configured to validate the boot-block program stored in the second section of non-volatile memory.” Independent claim 29 recites “means for validating a BIOS program stored in a first section of non-volatile memory by a boot-block program stored in a second section of non-volatile memory” and “means for validating the boot-block program stored in the second section of non-volatile memory by the BIOS program stored in the first section

of non-volatile memory.” Finally, claim 42 recites “validating a BIOS program stored in a first section of non-volatile memory by a boot-block program stored in a second section” and “validating the boot-block program stored in the second section of non-volatile memory by the BIOS program stored in the first section.” Further, the Examiner’s reliance on the theory of inherency is misplaced. Hence, the Mattison and Miller references, alone or in combination, do disclose or suggest the claimed subject matter.

With regard to the first point, the Mattison reference is directed to a technique for upgrading/downgrading a BIOS from a flash memory. *See* Mattison, col. 2, lines 56-67. To perform this upgrade/downgrade operation, the Mattison reference describes the use of a vendor private key to encrypt an upgrade/downgrade program to be installed on a system. *See id.* at col. 3, lines 23-31. The current flash memory verifies the vendor key of the upgrade/downgrade program before an image of the upgrade/downgrade program is loaded into the flash memory. *See id.* at col. 3, lines 32-57. Clearly, Mattison simply describes a system that upgrades/downgrades an existing program with a different version of that same program. In addition, the Mattison reference does not even *mention* a boot-block program. Thus, the reference cannot disclose using a boot-block program to validate BIOS and using BIOS to validate the boot-block program, as set forth in the above-quoted portions of the claims. As such, the Mattison reference fails to teach or suggest all of the claimed subject matter.

The Miller reference fails to cure the deficiencies of the Mattison reference. The Miller reference describes a technique for protecting a flash recovery code that formerly resided in a protected boot block of a non-symmetrical flash part. *See* Miller, col. 3, lines 24-28. In the reference, the contents of a first region, which is the boot block code, are copied to a second region. *See id.* at Fig. 3; col. 5, lines 45-55. Then, the boot block code is updated in the first region, and the first and second regions are compared. *See id* at col. 6, lines 23-50. That is, the Miller reference only teaches comparing the boot block code to the new boot block code, not using the boot-block program to validate BIOS and using BIOS to validate the boot-block program. Clearly, the reference does not disclose a BIOS program and a boot-block program having validation routines that verify each other. As such, the Miller reference fails to cure the deficiencies of the Mattison reference.

With regard to the second point, the Examiner's reliance on the theory of inherency is misplaced because a *boot-block program*, as recited in independent claims 1, 29 and 42, and *validating the BIOS and the boot-block program with each other* is not disclosed or inherently found in the Mattison reference. With regard to the boot-block program, the Examiner admitted that Mattison does not explicitly mention the flash memory could store the boot block program. Indeed, as noted above, the reference only describes an upgrade/downgrade program associated with the BIOS program. Because of the lack of express disclosure, the Examiner asserted that a *boot-block program* is inherently provided from a passage, at column 7, lines 23-25, of the Mattison reference. However, as noted in the previous response to Official Action mailed March 8, 2004, which is hereby incorporated by reference, the passage relied upon by the Examiner simply describes how a memory address/window

detector 110 operates to control the BIOS memory locations. That is, the reference simply refers to a flash memory upgrade program that interacts with the current program to allow the flash memory program to be upgraded. *See id.* at col. 3, lines 23-36. Clearly, this cited passage is simply referencing the BIOS and the BIOS extensions, and does not disclose or infer a *boot-block program*. As a result, the Examiner's assertion does not provide a basis in fact and/or sound or supportable technical reasoning to support the determination that the allegedly inherent characteristic *necessarily* flows from the teachings of the Mattison reference. Again, Applicants submit that the Examiner has not satisfied the evidentiary burden required by the binding precedents cited above.

Furthermore, even if the Mattison reference hypothetically could be construed to inherently disclose a boot-block program, the Mattison reference fails to disclose, inherently or otherwise, *validating the BIOS by the boot-block program and the boot-block program by the BIOS*. In the rejection, the Examiner appears to assert that a second passage, which is located at col. 9, lines 38-40 of the reference, discloses the validation routines. However, as discussed in the previous response, the Mattison system merely verifies that the vendor's key is from the vendor before the image is loaded into the flash memory to the upgrade/downgrade program. *See id.* at col. 3, lines 32-50. Although this upgrade/downgrade process described in the passage relied upon by the Examiner verifies the replacement program against the current program, the reference does not disclose the specific validation of the BIOS *and* the boot-block program against each other. Because the reference simply discloses a current program that verifies the vendor type of an upgrade/downgrade program, Applicants again

submit that the Examiner has not satisfied the evidentiary burden required by the binding precedence's cited above.

For at least these reasons, the Mattison and Miller references, alone or together, clearly do not contain each and every element set forth in the independent claims 1, 29 and 42, or the claims depending therefrom. Therefore, Applicants respectfully request withdrawal of the Examiner's rejection and allowance of the pending claims 1-10, 12-19, 21-30, 32-36, 38-43, 45-49 and 51-55.

Second Rejection Under 35 U.S.C. § 103

The Examiner rejected claims 11, 20, 31, 37, 33 and 50 under 35 U.S.C. § 103(a) as being rendered obvious by Mattison in view of Miller and Davis. The Applicants respectfully traverse the rejection.

The claims 11, 20, 31, 37, 33 and 50 depend from independent base claims and are patentable at least based on this dependency. In the rejection, the Examiner asserted that the Mattison and Miller references disclosed the claimed subject matter except the boot-block program does not allow the system to boot if the first hash does not match the second hash, and wherein the boot block program does not allow the system to boot if the first hash matches the second hash. In an attempt to cure these deficiencies, the Examiner asserted that the Davis reference discloses this subject matter. However, the Davis reference discloses a technique for securely updating an executable code through the use of a security processor. *See* Davis, col. 2, lines 10-18. The authentication and validation in Davis are performed by the cryptographic

processor 34, not a BIOS program and boot-block program. *See id.* at col. 2, lines 58-63; col. 3, lines 47-54. In fact, Davis does not even mention a *boot-block program*. As such, the Davis reference fails to cure the deficiencies of the Mattison and Miller references, alone or in combination.

For at least these reasons, the Mattison, Miller and Davis references clearly do not contain each and every element set forth in the independent claims 1, 29 and 42, much less, the dependent claims 11, 20, 31, 37, 33 and 50. Therefore, Applicants respectfully request withdrawal of the Examiner's rejection and allowance of the pending claims 11, 20, 31, 37, 33 and 50.

Conclusion

In view of the remarks set forth above, Applicants respectfully request allowance of the pending claims 1-55. If the Examiner believes that a telephonic interview will help speed this application toward issuance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,



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